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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,866	05/25/2006	Stefan Haaks	2003P08367WOUS	7442

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SIEMENS CORPORATION
INTELLECTUAL PROPERTY DEPARTMENT
170 WOOD AVENUE SOUTH
ISELIN, NJ 08830

EXAMINER

RAO, SHEELA S

ART UNIT	PAPER NUMBER
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2123

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03/12/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,866	Applicant(s) HAAKS ET AL.	
	Examiner Sheela Rao	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to papers filed on 17 December 2009.
2. Claims 10-18 are pending and presented for examination. Claims 1-9 were previously canceled.

Response to Amendment

3. The rejection of claims 10-17 under 35 USC §103(a) as being unpatentable over Eryurek et al. (US Patent Application Publication No. US 2003/0045962 A1) in view of Sainen (US Patent No. US 5,034,897) is maintained and has been restated below.
4. The rejection of claim 18 under 35 USC §103(a) as being unpatentable over Eryurek et al. (US Patent Application Publication No. US 2003/0045962 A1) in view of Sainen (US Patent No. US 5,034,897) and further in view of Lewis et al. (US Patent No. US 5,281,343 A) is maintained and has been restated below.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. US 2003/0045962 A1 to Eryurek et al. in view of US Patent No. US 5,034,897 to Sainen.

Independent claim 10 is directed to a method for increasing the capacity of an installation used to carry out an industrial process, comprising determining a plurality of process variables relevant for the capacity of the installation (in the reference by Eryurek paragraph [0002] defines the process variables); recording the process variables during changing operating conditions of the installation (paragraph [0014] of Eryurek describes the use of a microprocessor and its memory for storing data); determining a minimum control reserve of a plurality of control loops of the installation on the basis of the recorded process variables (paragraph [0009] of Eryurek teaches the use of a model to determine control information and the output of the process based upon the process variables); determining actions that increase the capacity of the installation, where the determined actions are based on the determined minimum control reserves (paragraph [0009] of Eryurek teaches the output of the model as being indicative of a quality measurement, wherein the model is later used to adjust setpoints accordingly; and implementing the actions resulting in an increase in installation capacity (paragraph [0009] of Eryurek continues to explain how the data obtained from the model is used to 'implement' changes to the process setpoints or control algorithms accordingly). Although Eryurek teaches a method of determining a minimum control reserve, taking actions that increase the capacity and implementing such actions, Eryurek does not disclose the elements of the instant invention to the extent of the

claimed limitations. For this reason, the prior art of Sainen is introduced. Sainen teaches of an optimum loom control method which enables the overall profit of a weaving mill to be maximized. In doing so, Sainen teaches of using a controlled factor or factors that corresponds to a controllable variable or variables, including profit evaluation functions, i.e. variables affecting profit, quality, effective number of picks equivalent to quantity produced, operating rates, energy consumption, which is carried out in a centralized control mode, i.e. control loop. The optimum loom control method includes controlling the loom on the basis of data representing capacity by raising the operating speed only when at least one of the control parameters has allowance, with respect to a corresponding value, i.e. control reserves. Determining actions that increase the capacity of the system based on the calculated parameters is explained in col. 4:ll. 34 et seq. and col. 6:ll. 60 et seq. of Sainen and the use of feedback in a control loop environment is shown in Figs. 1, 6 and 10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the optimization methodology of Sainen with that of Eyruek since it is well known that an increase in quality leads to increased capacity of production.

Claim 11 further comprises the steps of defining a desired increase in the capacity of the installation, determining the control reserves in the control loops of the installation necessary for the desired capacity increase, and determining the control loops with a control reserve that is too small for the desired capacity increase.

Paragraph [0009] teaches that the model is used to provide measurements related to the product output and then uses this data to assess the quality of the process output.

In claim 12 the step of investigation of the control loops with a control reserve that is too small and formulation of potential actions for producing the control reserves required in each case by relieving the load on the relevant control loops and/or by replacing components in the relevant control loops by higher- capacity components is claimed. Eryurek teaches this aspect of the instant invention in paragraph [0010] wherein a deviation in the product quality is detected prior to the actual production of the product and adjustments are made therefrom.

As per claim 13 the step of performing a technical and/or commercial evaluation of the potential actions are essentially carried through in the manufacturing techniques of the paper or paper pulp industry as per the prior art of reference as described beginning in paragraph [0009].

The core process being defined for determining the relevant process variables and interfaces of the core process with ancillary processes surrounding them being investigated for an effect relationship with a process variable representing the capacity of the installation as claimed in claim 14 is taught in paragraph [0011] of the prior art reference.

Claim 15 defines the installation as an installation for execution of a continuous process such as the manufacture of paper, textiles, plastic or metal foils. Eryurek teaches such in paragraph [0001] as the described process is within a paper manufacturing environment.

Paragraph [0002] teaches the limitation of claim 16, wherein the capacity of the installation is determined by the speed of production on the production line is claimed.

Claim 17 defines the method according to claim 11 as executed by a service provider company. Although Eryurek does not specifically state the control process being executed by a service provider company, it is well known in the art for specific manufacturing and production companies to undertake the processing of certain products or processes for delivery to other industries. Sainen discusses the different environments that the patented system/method could be used in, in column 14 at lines 5-9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a paper manufacturing company produce the paper for another industry as it would involve an innumerable amount of services and products for a non-paper manufacturer to produce paper, resulting in wasted time, expenses, and operations.

7. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication No. US 2003/0045962 A1 to Eryurek et al. in view of US Patent No. US 5,034,897 to Sainen, as applied to claim 10, and further in view of US Patent No. US 5,281,343 A to Lewis et al.

Claim 18 defines the process variables of claim 15 as being filtered approximately every 2 seconds and sampled approximately every 5 seconds when they are recorded. Eryurek teaches the production of paper but does not explicitly disclose the process of doing so with regard to filtering and sampling. However, the prior art by Lewis et al. teaches that in a paper manufacturing process, filtering and sampling of dispersed solids is a necessary requirement. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the aspects

of the paper manufacturing process as per Lewis to the controlling method of Eryurek so as to teach the complete manufacturing of paper in a controlled process. The specific time limits as claimed is a design choice as it is well known to specify time constraints in different process controlling methods.

Response to Arguments

8. Applicant's arguments filed on December 17, 2009 have been fully considered but they are not persuasive.

Applicant's arguments are mainly directed to the elements of instant claim 10 and states that the references of prior art used to teach the elements of the instant claim as being improper. The first issue is that the rejection of claim 10 "implies that because paragraph [0014] of Eryurek discloses use of a microprocessor configured to receive a setpoint which can be stored in memory" being applied to the claim requirement of "recording the process variables during changing operating conditions..." as being improper because "no where in the cited paragraph is there disclosure of such."

Paragraph [0014] of the Eryurek reference describes the elements of Fig. 3 of the prior art which is a block diagram of the control system. Utilized in this control system is a microprocessor which receives a setpoint, i.e. a process variable, and is able to store in the memory, i.e. recording of the process variable, the storing of data is synonymous to recording data in the computer arts. As for the changing of the operations of the instant claim, paragraph [0013] explains the changing of the operation conditions as where the control system receives a setpoint and/or one or more control elements based upon the modeled product output. This interpretation is based upon the references use of a

model as stated in paragraph [0009] where a “model is used to provide an inferred measurement related to a modeled product output ... based upon this inferred measurement related to the quality of the process output, the up stream process setpoints or control algorithms can be adjusted.” Thus, Examiner’s association of the claimed limitation with the cited portions of the reference is appropriate since sensors and actuators are used to gather the measurements in changing conditions as they are both used as dynamic operators in measurement. Next, Applicant argues that claim 10 requires “determining a minimum control reserve of a plurality of control loops of the installation on the basis of the recorded process variables ...” but is not shown in the cited portion of the reference of prior art. Again, Examiner disagrees. The “minimum control reserve” in the claims is understood to be the smallest control reserve and is used as the factor to determine whether an increase in capacity is needed as per Applicant’s disclosure in paragraph [0029] in Patent Application Publication or page 6 line 5 of the specification. Based upon this description, Eryurek's disclosure states that because of dead time, the control system cannot tolerate high gain (increased capacity), for this reason the invention of the prior art reduces the dead time between the control element and inferred measurements so that an increased loop gain can be used in the control algorithms to improve performance. Furthermore, based upon these inferred measurements which are related to the process output, the setpoints or reserves can be adjusted accordingly as stated in paragraphs [0009-0010]. Lastly Applicant argues that the prior Office action fails to provide any citation on page 4 for the loom being “controlled based on data representing capacity by raising the operating speed ...”. The

previous Office action clearly states on page 4 that the prior art of Sainen teaches the aspect of “determining actions that increase the capacity of the system...” in column 4 at line 34 et seq. and in column 6 at line 60 et seq.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272-3751. The examiner can normally be reached Monday - Wednesday from 9:00 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on (571) 272-3753. The fax number for the

organization where this application or any proceeding papers has been assigned is (571) 273- 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. It should be noted that status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see [http:// pair-direct.uspto.gov](http://pair-direct.uspto.gov). Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sheela Rao/
Examiner, Art Unit 2123
March 9, 2010

/Paul L Rodriguez/
Supervisory Patent Examiner, Art Unit 2123